

**Ku70 Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP51618**

**Specification**

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**Ku70 Antibody - Product Information**

Application	<b>WB, ICC, IHC-P, E</b>
Primary Accession	<a href="#">P12956</a>
Reactivity	<b>Human</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Calculated MW	<b>70 KDa</b>

**Ku70 Antibody - Additional Information**

**Gene ID** 2547

**Other Names**

X-ray repair cross-complementing protein 6, 364-, 4299-, 5'-deoxyribose-5-phosphate lyase Ku70, 5'-dRP lyase Ku70, 70 kDa subunit of Ku antigen, ATP-dependent DNA helicase 2 subunit 1, ATP-dependent DNA helicase II 70 kDa subunit, CTC box-binding factor 75 kDa subunit, CTC75, CTCBF, DNA repair protein XRCC6, Lupus Ku autoantigen protein p70, Ku70, Thyroid-lupus autoantigen, TLAA, X-ray repair complementing defective repair in Chinese hamster cells 6, XRCC6, G22P1

**Format**

0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

**Storage**

Store at -20 °C. Stable for 12 months from date of receipt

**Ku70 Antibody - Protein Information**

**Name** XRCC6

**Synonyms** G22P1

**Function**

Single-stranded DNA-dependent ATP-dependent helicase that plays a key role in DNA non-homologous end joining (NHEJ) by recruiting DNA-PK to DNA (PubMed: <a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed: <a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed: <a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). Required for double-strand break repair and V(D)J recombination (PubMed: <a

href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). Also has a role in chromosome translocation (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). Has a role in chromosome translocation (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). It works in the 3'-5' direction (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). During NHEJ, the XRCC5-XRCC6 dimer performs the recognition step: it recognizes and binds to the broken ends of the DNA and protects them from further resection (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). Binding to DNA may be mediated by XRCC6 (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). The XRCC5-XRCC6 dimer acts as a regulatory subunit of the DNA-dependent protein kinase complex DNA-PK by increasing the affinity of the catalytic subunit PRKDC to DNA by 100-fold (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>

target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). The XRCC5-XRCC6 dimer is probably involved in stabilizing broken DNA ends and bringing them together (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step (PubMed:<a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed:<a href="http://www.uniprot.org/citations/20493174" target="\_blank">20493174</a>, PubMed:<a href="http://www.uniprot.org/citations/2466842" target="\_blank">2466842</a>, PubMed:<a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>, PubMed:<a href="http://www.uniprot.org/citations/9742108" target="\_blank">9742108</a>). Probably also acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), by catalyzing the beta-elimination of the 5' deoxyribose-5-phosphate at an abasic site near double-strand breaks (PubMed:<a href="http://www.uniprot.org/citations/20383123" target="\_blank">20383123</a>). 5'-dRP lyase activity allows to 'clean' the termini of abasic sites, a class of nucleotide damage commonly associated with strand breaks, before such broken ends can be joined (PubMed:<a href="http://www.uniprot.org/citations/20383123" target="\_blank">20383123</a>). The XRCC5-XRCC6 dimer together with APEX1 acts as a negative regulator of transcription (PubMed:<a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). In association with NAA15, the XRCC5-XRCC6 dimer binds to the osteocalcin promoter and activates osteocalcin expression (PubMed:<a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>). Plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP-RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway (PubMed:<a href="http://www.uniprot.org/citations/28712728" target="\_blank">28712728</a>).

#### Cellular Location

Nucleus. Chromosome

#### Ku70 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### Ku70 Antibody - Images

## **Ku70 Antibody - Background**

Single-stranded DNA-dependent ATP-dependent helicase. Has a role in chromosome translocation. The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner. It works in the 3'-5' direction. Binding to DNA may be mediated by XRCC6. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination. The XRCC5/6 dimer acts as regulatory subunit of the DNA-dependent protein kinase complex DNA-PK by increasing the affinity of the catalytic subunit PRKDC to DNA by 100-fold. The XRCC5/6 dimer is probably involved in stabilizing broken DNA ends and bringing them together. The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step. Required for osteocalcin gene expression. Probably also acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), by catalyzing the beta-elimination of the 5' deoxyribose-5-phosphate at an abasic site near double-strand breaks. 5'-dRP lyase activity allows to 'clean' the termini of abasic sites, a class of nucleotide damage commonly associated with strand breaks, before such broken ends can be joined. The XRCC5/6 dimer together with APEX1 acts as a negative regulator of transcription.

## **Ku70 Antibody - References**

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Halleck A.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.  
Dunham I.,et al.Nature 402:489-495(1999).